



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW4168A  
 UNIQUE ID NUMBER: 4PW067  
 COMBUSTOR: Floatwall  
 ENGINE TYPE: TF

BYPASS RATIO: 5.1  
 PRESSURE RATIO ( $\pi_{00}$ ): 33.1  
 RATED THRUST ( $F_{00}$ ) (kN): 302.5

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	6.0	35.5	75.6	5.1
AS % OF ORIGINAL LIMIT	30.6	30.1	71.2	29.2
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			89.0	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			103.3	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			116.0	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			134.2	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	2.836	0.03	0.72	42.39	4.0
CLIMB OUT	85	2.2	2.327	0.04	0.74	33.91	2.6
APPROACH	30	4.0	0.798	0.15	1.75	14.66	0.7
IDLE	7	26.0	0.221	3.29	23.51	4.15	0.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			963	1179	8754	19704	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				3.9	28.9	65.2	4.0
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.3
TEMPERATURE (K)	273.5
ABS HUMIDITY (kg/kg)	0.0018

### FUEL

SPEC	Jet A
H/C	1.89
AROM (%)	21.85

MANUFACTURER: Pratt & Whitney  
 TEST ORGANIZATION: Pratt & Whitney  
 TEST LOCATION: East Hartford, CT  
 TEST DATES: 14/02/1993-17/02/1993

### NO<sub>x</sub> REGULATION PARAGRAPH

x	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
	2.3.2 e) (CAEP/8)

### REMARKS

1. Data from X821-3 with Floatwall Combustor

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)